

FIG. 1.

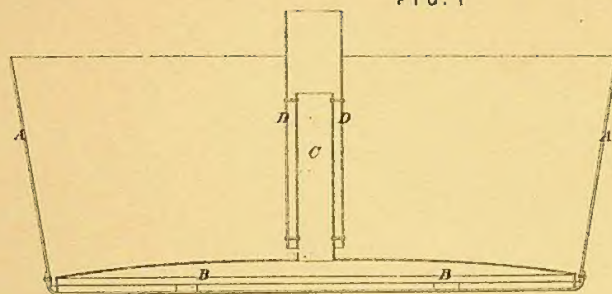


FIG. 2.

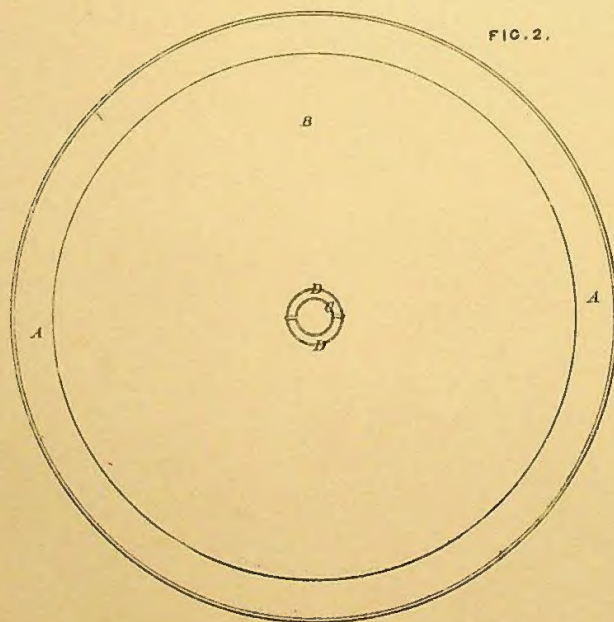


FIG. 3.

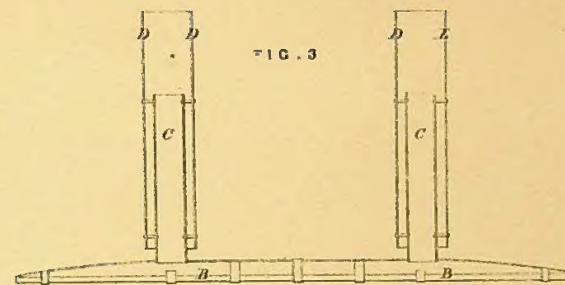
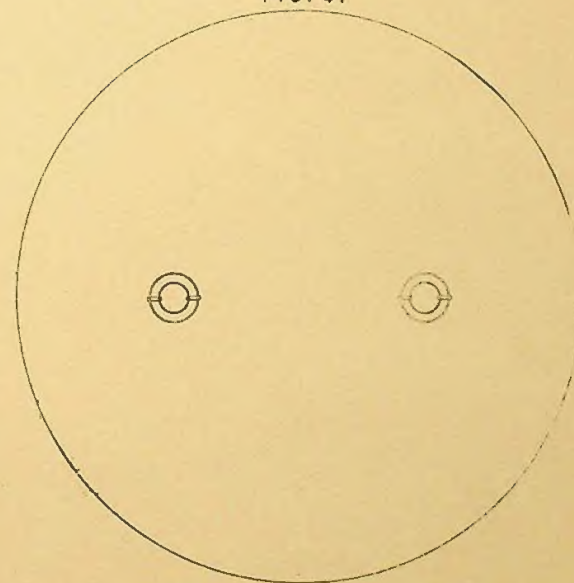


FIG. 4.



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FIG. 8(2) Sheet 2

FIG. 7.

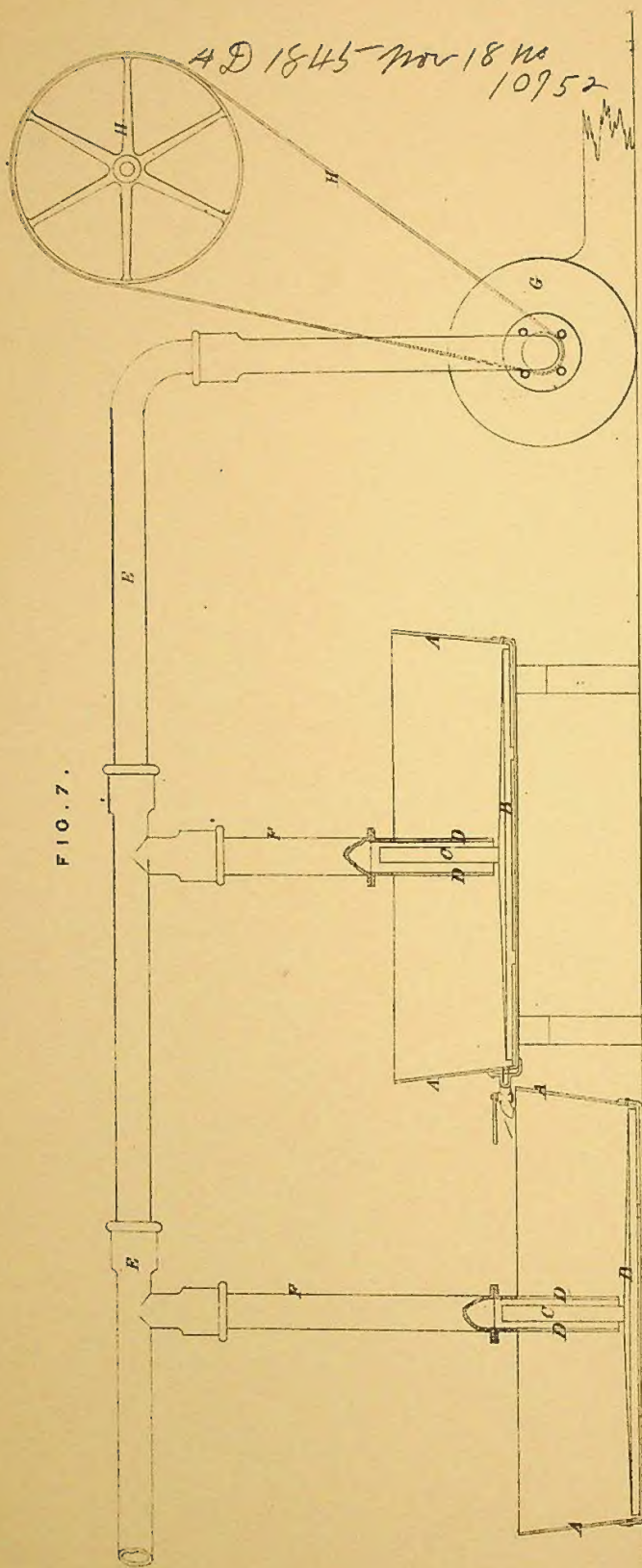


FIG. 5.

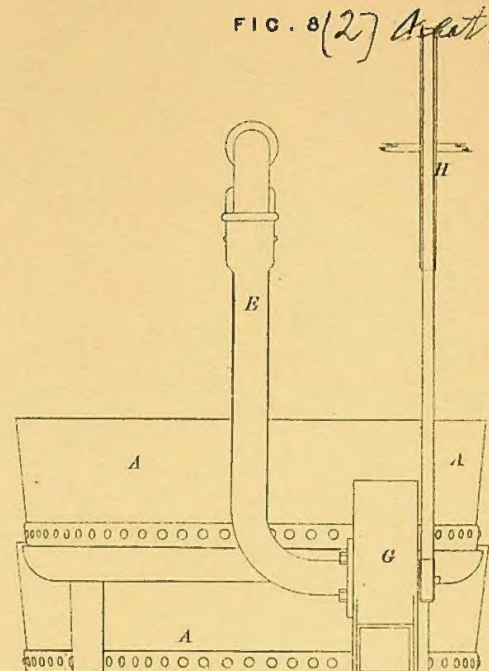
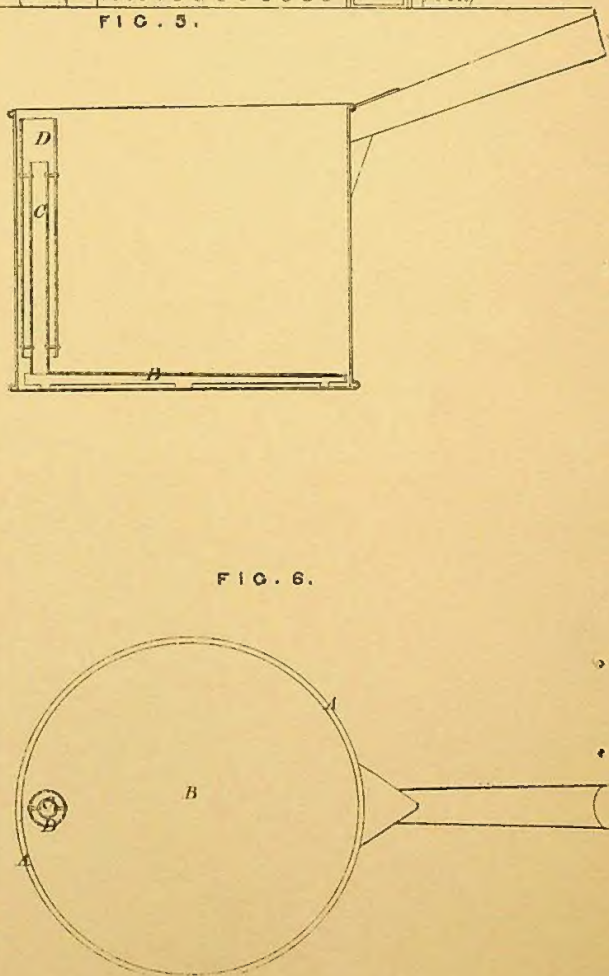


FIG. 6.





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A.D. 1845 . . . . . N° 10,952.

Extract of Malt.

DIRCKS' SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, HENRY DIRCKS, of Nicholas Lane, in the City of London, Engineer, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her  
5 Royal Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Eighteenth day of November, in the ninth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Henry Dircks, Her special license, full power, sole privilege and authority, that I, the said Henry Dircks, my executors, administrators, and  
10 assigns, and such others as I, the said Henry Dircks, my executors, administrators, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein mentioned, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, and also in all Her Majesty's Colonies  
15 and Plantations abroad, and in the Islands of Guernsey, Jersey, Alderney, Sark, and Man, my Invention of "CERTAIN IMPROVEMENTS IN THE OBTAINING AND PREPARING OF EXTRACTS FROM CERTAIN VEGETABLE MATTERS, AND IN THE APPARATUS CONNECTED THEREWITH; WHICH APPARATUS IS ALSO APPLICABLE TO OTHER  
SIMILAR PURPOSES;" in which said Letters Patent is contained a proviso obliging  
20 me, the said Henry Dirks, by an instrument in writing under my hand and



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*Dircks' Improvements in Obtaining Extract of Malt.*

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seal, particularly to describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, and to cause the same to be enrolled in Her Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said in part recited Letters Patent, as in and by the same, reference being thereunto had, will more fully 5 and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said Henry Dirks, do hereby declare that the nature of my said Invention, and the manner in which the same is to be performed, is particularly described and ascertained in and by the following statement thereof, reference being had to 10 the Drawings hereto annexed, and to the letters and figures marked thereon, which represent and refer to the same parts in all the Drawings (that is to say):—

The objects of my improvements are, first, in manufacturing a concentrated extract of malt, combined with an extract of unmalted grain or farinaceous 15 matters, and with or without the addition of hops or other vegetable matters; second, in certain apparatus of a novel construction to be employed for evaporating extracts of all such vegetable matters; third, in the application of the said apparatus to other similar purposes, as the evaporation of water, brine, and other liquids, however viscid. And in order to afford the best 20 information for carrying my improvements and my Invention into effect, I give the following description of the process and the means I employ:—

Having obtained an infusion of malt, with or without unmalted grain, by the usual process of mashing, I proceed in the next place to infuse it with or without farina, hops, or other vegetable matters. I continue the infusion at a 25 temperature varying from 160° to 190° Fahrenheit, taking care to avoid discoloring the extract. The same observations will apply to all other vegetable infusions to be submitted to concentration, as I do not claim for any particular method of obtaining such infusions. The extracts intended for brewing from I recommend to be made with wort prepared from the finest pale malt along 30 with the best hops. When intended for home-made wines or beer I use the finest pale malt only. The extracts intended for colouring matter, and which have to be evaporated at a temperature of 200° and upwards, until sufficiently carbonized, I prepare by adding a portion of unmalted grain or farinaceous matter, generally in the proportion of one third of the former to two thirds of 35 the latter, or thereabouts, keeping the infusion heated at a temperature ranging up to about 167° Fahrenheit, until saccharized, after which evaporation may be conducted at from 212° to 300°, or any desired temperature. The extracts when prepared to have medicinal properties may be concentrated



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infusions of one quarter of malt combined with about ten or twelve pounds of ginger, or one quarter of malt combined with about four pounds of spruce and four pounds of hops, or one quarter of malt combined with one bushel of scurvy grass and six pounds of hops, or about these proportions for each, and  
 5 may be brewed from to make beer of excellent quality. Other descriptions of extracts may be combinations of an extract of malt or malt and hops with honey, or the same extracts may be flavored with liquors ~~root~~ or like medicinal vegetable matters. When using evaporating pans I sometimes insert in them a false bottom or steam shield, with one or more appropriate  
 10 steam pipes, the object being to collect and bring off the steam formed at the bottom of the pan or boiler through the central portion only of the contained liquor. In the accompanying Drawings are several arrangements of apparatus which I employ for evaporating extracts and solutions.

Fig. 1 represents in longitudinal section one arrangement of evaporating  
 15 apparatus, in which A, A, A, is a large copper or boiler. B, B, a false bottom or steam shield, provided at its centre with an upright pipe C, C, which is surrounded by a tube D, D, of a larger diameter, and open at both ends. This tube D is supported by arms from the pipe C, and is intended to detain and convey back to the pan, copper, or boiler whatever liquid may be  
 20 carried up the pipe C, C, along with the steam. The steam shield B, B, is placed a short distance from the bottom of the pan or other boiler, and may have a rim turned down round the edge, and be slightly convex towards the steam pipe, to collect and direct the steam to the escape tube C, C.

Fig. 2 is a plan view of the shield. Fig. 3 is a section of the shield, with  
 25 short tubes *d, d, d, d*, for favoring the circulation of the liquid, which tubes being of small diameter will permit little or no steam to escape by them. They require to be no longer than the depth of the outer rim *e, e*. Fig. 4 is a plan view of the same.

Fig. 5 is another mode of applying the same Invention for domestic or other  
 30 purposes. A, A, is a common pan; B the double bottom or steam shield; C the steam pipe; and D the hood or conductor for detaining and returning to the contents of the pan whatever liquid would otherwise have boiled over. Fig. 6 is a plan view of the same.

Figs. 7 & 8 shew a mode of exhausting the steam by mechanical means.  
 35 A is the pan or boiler. B the steam shield. C the steam escape pipe, surrounded with a casing or pipe D. A series of such pans or boilers may have their steam collecting pipes connected with a main pipe E by downcast pipes F, and so be made to communicate with a fan G, or with a pump or other



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mechanical means of exhausting the air and vapour. H the driving strap and pulley. The concentration of any of the described extracts may be carried sufficiently far to render them solid, and capable of being conveniently packed by simply covering cakes or rolls of them with tin foil. This inspissation may be conveniently performed by the process of stoving the concentrated extract 5 in a hot-air chamber, the extract being therein exposed in shallow dishes or other suitable vessels till sufficiently consistent. I do not claim as my Invention the merely making of an extract of malt and hops; but I do specially claim for all the other vegetable extracts herein enumerated, and for the preparations of the same; also for my Invention of a novel mode of promoting evaporation, 10 without confining myself to the particular number, dimensions, or situation of the several parts described, which may be varied as circumstances may require.

Having now described the various processes for obtaining and preparing certain vegetable extracts, and the several parts of the apparatus which con- 15 stitute my improvements, I proceed to define and explain the extent of my claims, and that in numerical order, believing every one of them to be independent of each other, and respectively new and useful.

Firstly, I claim the preparation of a concentrated saccharine extract from the peculiar combination of malt and unmalted grain, or other farinaceous 20 matters, with or without hops.

Secondly, the several combinations of the foregoing extracts, and also those of malt alone, or malt and hops, with ginger, spruce, scurvy grass, honey, liquorice, or horseradish.

Thirdly, the steam shield apparatus for collecting the large body of steam 25 formed under the liquid surface or close to the bottom of the pans and other boilers, and conducting its discharge through a small portion of the contained liquid, whether used singly or combined with any mechanical mode of exhausting the steam.

Fourthly, the application of the steam shield apparatus in my third claim 30 to other like purposes, for preventing boiling over during violent ebullition in evaporating water, brine, and any other liquids, however viscid they may be.

In witness whereof, I, the said Henry Dircks, have hereunto set my hand and seal, this Eighteenth day of May, in the year of our Lord 35 One thousand eight hundred and forty-six.

HENRY (L.S.) DIRCKS.



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AND BE IT REMEMBERED, that on the same Eighteenth day of May, in the year above mentioned, the aforesaid Henry Dircks came before our Lady the Queen in Her Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained, in form above written. And also  
5 the Specification aforesaid was stamped according to the tenor of the Statute in that case made and provided.

A. H. LYNCH.

Inrolled the same Eighteenth day of May, in the year above written.

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